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ABSTRACT

Teaching is a complex act requiring expertise relative to content, students, and the myriad of alternatives available to bring the two together in meaningful ways. This monograph is designed to assist teachers in examining and altering their own teaching practices and in transforming the classroom from a place of "dull sameness" to an environment where excitement reigns and student growth is at the forefront. The teaching strategies outlined all emphasize active student involvement, a focus on student collaboration, and development of thinking skills. Discussion of each strategy includes an overview describing the approach, providing a rationale for its use and resources for further information about the strategy, followed by a specific lesson plan, usually focusing on some aspect of home economics or family life which uses the strategy. The teaching strategies discussed are: (1) concept attainment; (2) inductive thinking; (3) cooperative learning; (4) Jigsaw, a specific cooperative learning strategy; (5) Thelen's Group Investigation, a group approach to problems of social significance; (6) Social Science Inquiry; (7) Suchman Inquiry which emphasizes independent and disciplined inquiry; (8) games and simulations; (9) synectics, a creative group problem solving process; and (10) moral development. (Contains 22 references.) (ND)

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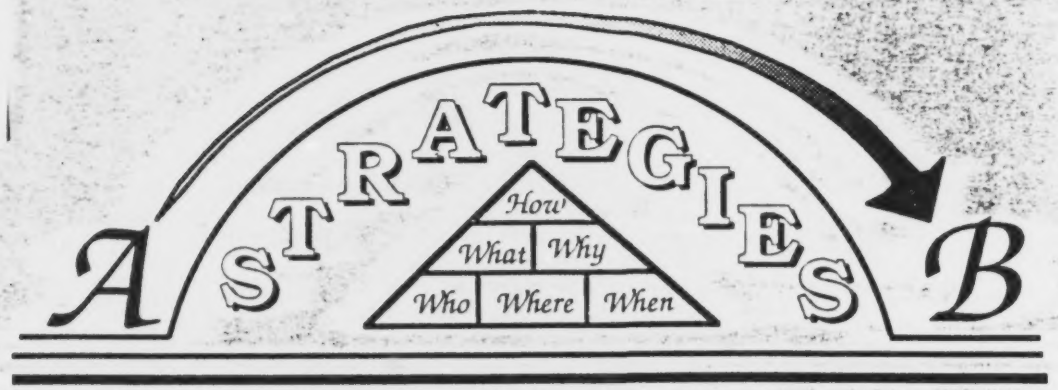

Teaching Strategies to Facilitate Learning

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FOREWORD

Have you changed your teaching strategies lately? It is important that educators look to new and innovative methods to facilitate learning. All types of teaching strategies need to be used. More importantly, teachers need to be made aware that different strategies exist. The use of a variety of methods can transform an average learning classroom into an innovative, exploring learning center.

Allowing teachers to expand and explore alternatives in presenting information to students gives everyone an opportunity to grow. The students may acquire a renewed interest in learning that will result in achieving beyond their current levels. Teachers can renew their interest in helping young people to learn and to acquire a desire to remain in the classroom.

By collecting, developing, and creating new Teaching Strategies to Facilitate Learning, the authors have expanded our resource files to include ways to improve, update, and further develop the classroom. Our appreciation needs to be expressed to these authors who have taken the time to develop these strategies for home economics. The Home Economics Education Association is pleased to publish the monograph and recommends its use by teachers at several levels of instruction.

The Home Economics Education Association and Executive Board would like to express their sincere thanks to the authors Cathleen Love, Barbara Nelson, Gene Gloeckner, Dawn Mallette, and Sally Yahnke for their foresight to look at the future of teaching. Thank you to the Publication Review Committee for their work and review of this publication. A special thanks goes to Dr. Mary Ann Block, Publication Chair for her tireless and true commitment in the publication of this monograph.

President,
Judith Rae Kreutzer

TEACHING STRATEGIES TO FACILITATE LEARNING

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TEACHING STRATEGIES TO FACILITATE LEARNING

Educational reform efforts across the country are proposing numerous changes for public school teaching. Many of the suggestions for change recommend that teachers instruct students differently, getting them actively involved and promoting their growth as thinkers and collaborators. This HEEA monograph is written to assist teachers in examining and altering their own teaching practices and transforming the classroom from a place of "dull sameness" (Goodlad, 1984) to an environment where excitement reigns and student growth is at the forefront.

In teaching, it is no longer enough to just "know" one's subject and to "deliver" it to students. Teaching is a complex act requiring expertise relative to content, students, and the myriad of alternatives available to bring the two together in meaningful ways. Teachers must become high-level problem-solvers who can move dynamically among instructional frameworks to create environments where all students can succeed. The expectation that teachers "know all they need to know" upon graduation is an illusion ascribed to by only the naive and ill-informed. **Growth in teaching is a lifelong process which provides teachers with the challenge and excitement to stay young and fresh and optimistic.**

The teaching strategies outlined in this monograph were chosen for three criteria. First, active student involvement is critical to growth. Whether teachers use direct instruction strategies or experiential alternatives, students must remain either overtly or covertly involved. When the content of learning is meaningful and when students are drawn into the activity, learning is more probable.

The second criteria for choosing these strategies was their focus on collaboration. Student success in school and in life is highly dependent upon their abilities to work collaboratively with others. The competitive world is changing to a world where we must work together to create "products" which are far superior to what individuals working alone can accomplish.

The final criteria was an emphasis on enhancing thinking skills. The school's role in nurturing thinking skills is of paramount importance. Life is full of decisions, and students need to develop the capabilities to approach problems systematically and to consider alternatives logically and creatively.

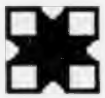
For each strategy, the authors present a two- to three-page overview describing the approach, providing a rationale for its use, suggesting when its use may be appropriate, explaining how to use it, and providing resources for further information about the strategy. Following the overview, a specific lesson plan using the strategy is provided. It is our hope that the examples in this monograph will help teachers to discover and rediscover teaching alternatives which will be rejuvenating to them, their students, and their classrooms.

GUIDE TO LESSON CATEGORIES

The lessons that follow are each formatted identically. For ease in locating the category in any lesson, each has its own symbol. Lesson categories are described below.

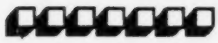
Perennial Problem

A Perennial Problem is one faced over and over by successive generations of families. Perennial Problems include enduring questions about how to improve the quality of families. Posing curriculum lessons as Perennial Problems avoids focusing on time-specific problems.



Practical Problem

A Practical Problem identifies an action that can help address the Perennial Problem. This action is born of reasoned thought and sound judgment. Posing a Practical Problem in curriculum is a way of focusing on both affective and cognitive processes, on both knowledge and values, on life experiences, and on thought and action. The Practical Problem approach can be used to help analyze a teaching situation, identify and address an education dilemma, generate and critique alternatives, and make value judgments.



Objectives

An objective describes or defines what the learners have to do to demonstrate their attainment of the intent of the lesson.

Debriefing

Debriefing Strategies are options for summarizing the lesson. Learners need the opportunity to discuss the content learned and the process in which they learned it.

Evaluation Options

Evaluation Options for each lesson are based on the lesson's content, process, and application objectives. These options are meant to be adapted to meet the needs of the learners.

CONCEPT ATTAINMENT STRATEGY

- Jerome Bruner, Jacqueline Goodnow, George Austin

What is the Concept Attainment Strategy?

The challenge for students in a concept attainment activity is to distinguish the concept, based on comparing and contrasting positive and negative examples. The activity can be teacher controlled, with the teacher presenting the examples to the students, placing them in either YES or NO categories, or it can be more student controlled, with the students active in manipulating the examples.

Why Use the Concept Attainment Strategy?

Learning concepts using this strategy not only enables students to learn specific content, but also they learn to discriminate among attributes, think more critically, approach problems more systematically, generate and test hypotheses, and learn from their mistakes. Concept analysis can be highly engaging for students. One teacher comments: "*This model has many attributes. The students learn thinking strategies and the teacher can observe these in motion. More importantly, the students become enthusiastic about what is happening in class and are able to focus their attention well.*"

When to Use the Concept Attainment Strategy

Conceptual learning is at the heart of schooling, and teachers are continually structuring lessons to help students understand the key concepts inherent in the subject matter. Whenever the goals of the class revolve around identifying the key characteristics (essential attributes) of concepts, discriminating between different concepts, and determining the rules that surround concepts, concept attainment is appropriate. Often teachers use concept attainment lessons to either introduce or review concepts. The first few times that teachers use concept attainment activities, typically they need to plan ahead to make certain that the concept is clear, the examples and non-examples appropriately discriminate the concept, and that the

rule is understandable. However, once teachers and students become comfortable with the strategy, often concept attainment activities can be quickly developed with little prior planning.

How to Use the Concept Attainment Strategy

PLANNING

In planning for a concept attainment lesson, the teacher essentially goes through the same mental process which they will later ask of their students, and this experience is extremely valuable in the subsequent conduct of the activity. Because teachers have to "stretch" their thinking in the development of the concept attainment lesson, they frequently become more sensitive to student frustrations and thinking processes. The obvious first step in planning is to determine the concept (e.g., democracy, mammals, alliteration, consumerism, etc.). Second, the teacher determines the critical attributes of the concept. Third, the teacher selects and orders examples and non-examples (10 each), making sure that every positive example contains all critical attributes. (Teachers should beware of having parallel concepts running in the YES and NO columns since this can be confusing to students.) Finally, the rule is stated. The following format structures the planning process.

Name of Concept _____

Essential Attributes _____ _____

_____ _____

Examples	Non-Examples
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Rule _____

_____

IMPLEMENTATION

In order to ensure a smooth implementation of the concept attainment activity, the teacher should establish guidelines. For example: *"There are two columns on the board, a YES column where I will place examples of the concept and a NO column where I will place non-examples. First, I'll present 3 clues (a YES, a NO, and another YES). After that, I'll present either examples or non-examples of the concept, asking you to place them in the correct column. Concentrate on the YES column, looking for similarities and compare the items in the YES column to those in the NO column. If you think you know the concept, please don't blurt it out. Instead, volunteer to guess the next clue or offer another example or non-example. After we have finished the activity, I will ask someone to state the rule which governs the concept."*

If students are new to the concept attainment activity (and sometimes just for fun), warm-up activities are helpful. Placing students physically in the YES or NO column based on concepts, such as striped shirts, glasses, brown eyes, etc., can help them to become attuned to the conceptual thinking required.

As the activity begins, the teacher presents examples and non-examples (which might be words written on cards, pictures, objects, etc.) consecutively. The first three should alternate--example, non-example, example); the remaining are ordered randomly. The teacher should be careful not to give the concept away by marking or color-coding cues. In most cases, the examples of a concept have different levels of difficulty, and arranging the clues from *medium*, to *hard*, to *easy* enables the teacher to challenge the students who get the concept quickly (with a more difficult clue) or encourage students who are becoming frustrated (with an easier clue).

As the activity progresses, teachers should be alert to the frustration levels of their students. Some frustration is important since it challenges students to think. However, if students "drop out" or seem ready to give up, teachers may want to offer some clues. If there are a few students who appear to be "blocked" (and most of the class knows the concept), it is probably wise to have a student verbalize the rule and terminate the activity. The ensuing discussion of the thinking process often helps them to analyze where they became confused. Another experience which teachers sometimes encounter is students who can correctly categorize the examples and non-examples, yet are unable to identify the concept or state the rule. In such cases, the teacher needs to help students by offering clues to help them "talk through" what they learned. Stating the rule is an important step in the activity and should not be skirted.

DEBRIEFING

As important as the concept itself is, it is equally important that students analyze their thinking strategies--what worked and what didn't. Getting students to analyze their thinking strategies is not an easy task. Sometimes they don't have the vocabulary to describe what occurred in their thinking, and they may become easily discouraged in trying to verbalize their ideas. Some questions which can help students in their analyses are: "At which example did you know the concept? What examples were particularly helpful and why? What was another guess that you had? What clue made you discard that hypothesis? Did you look at examples one-at-a-time or did you consider several at once? How effective was guessing for you? Did any of you have 'a system'? How did it work?"

Association for Supervision and Curriculum Development. (1987). Teaching strategies library: Research-based strategies for teachers. Alexandria, VA: Author.

Dalton, M., & Dobb, J. (1988, April). Teaching thinking: The development of skill in using two models of teaching and model-relevant thinking. Paper presented at the Annual Meeting of the American Education Research Association, San Francisco, CA.

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LESSON PLAN

Perennial Problem

What should be done about providing appropriate care for children?

Practical Problem

What should be done to help students understand the impact look-alike household products may have on their responsibilities as older siblings or child-care providers?

Objectives

The learner will:

Content: Evaluate what implications look-alike household products have on the health and well being of children.

Process: Evaluate how comparing and contrasting examples and non-examples helps them think critically, formulate ideas, and solve problems.

Application: Identify how the lesson content relates to their ability to provide safe childcare for children.

TEACHING-LEARNING INTERACTION

The interaction with students for this lesson will be Bruner's Concept Attainment Strategy. This is a method to help students a) recognize examples of key concepts or definitions, b) use information to form and test hypotheses, c) separate the relevant from the irrelevant, and d) correctly explain definitions and examples. The following teaching-learning interaction is an example of the use of this strategy.

INTRODUCTION

Ask students to think a minute about all the responsibilities they have as older siblings or child care providers. Which responsibilities do they perceive as most important? How do their responsibilities impact the children they are caring for?

Concept: Some non-poisonous household items appear the same to children as some harmful poisonous items.

Attributes: Look-alike household items, harmful or non-harmful, appearance is deceiving to children.

PHASE I: Examples and Non-examples are presented to students. Using the dialogue in the Implementation section of the strategy explanation, present the students with one YES example, a NO example, followed by another YES example. The following are YES and NO examples:

YES	NO
gumballs	mothballs
shredded gum	chewing tobacco
Boston baked beans candy	Geritol
lemon juice	lemon ammonia
powdered milk	detergent
drinking water	bleach
oatmeal	D-con
candy cigarettes	cigarettes
red hot cinnamon candies	Sudafed

After the initial three examples continue by presenting examples and non-examples of the concept and have the students determine which column each fits into. Remember to request that if someone knows the concept they keep it to themselves and instead have them volunteer to offer another example or non-example.

PHASE II: Students test their attainment of the concept. Possible questions to ask to enhance the students understanding of the concept:

1. Which items belong together?
2. What pairs exist?
3. What is the same about all the yes examples?
4. What other items could be placed into the groups?
5. What is the concept?

PHASE III: Rule.

Childcare providers need to be aware of common household products that could be misread by children and end up to be harmful because of their look-alike qualities.

Debriefing

Content:

- What implications does this information have on childcare?
- How will you use the information learned in your personal childcare responsibilities?

Process:

- How was this problem solving activity beneficial in examining the impact look-alike household products have on responsibilities as childcare providers?
- How did you use the process to evaluate the knowledge you gained and the impact that knowledge will have on children?

Evaluation Options

- Have students put together a list of emergency numbers (i.e., Poison Control Hotline, local hospital emergency room, etc.) that would be beneficial to take along when babysitting or have when caring for younger siblings.
- Divide the class into groups. Give each group one or two of the following situations and have them demonstrate their solution to the class. (i.e., child is choking, child burned him/herself, child fell and scraped his/her knee, child fell and hit his/her head, child is bitten by the neighbors dog, child complains of a tummy ache, child is bitten by an insect (bee, wasp, spider), child cuts his/her hand on glass, or you suspect the child has swallowed poison.)

INDUCTIVE THINKING STRATEGY

- Hilda Taba

What is the Taba Inductive Thinking Strategy?

Used consistently by scientists and detectives, the inductive thinking strategy enables the systematic exploration of ideas as students formulate concepts (list, group, label), interpret data (identify, explain, infer), and apply principles (predict, support, verify).

Why Use the Taba Inductive Thinking Strategy?

There are both cognitive and affective outcomes when using the inductive thinking strategy. First, students learn the content. As a result of the varied interaction with the material, they remember the information. It has become meaningful to them because they have become involved with the ideas in a very real way. Second, they learn a thinking process which can serve them well as they consider both "school" and "life" decisions--generating, organizing, and labeling information and analyzing, relating, and hypothesizing. Third, students enjoy the learning process. They are not merely passive consumers of information but rather active in working with ideas and possibilities; they communicate with, and learn from each other; and they are challenged to take control of their own learning.

When to Use the Taba Inductive Thinking Strategy

This strategy is effective whenever there is data that students can organize or reorganize and manipulate ideas so that they take on meaning. The inductive strategy is particularly appropriate for introducing and concluding units of study. Used as an introductory lesson, the strategy often gives the teacher an assessment of students' backgrounds. It is a good way to stimulate students' memories--pulling together what they already know--in a rather painless way. As a concluding activity, students can reflect back on a unit of study, creating organizational structures to help them to remember and relate ideas.

How to Use the Taba Inductive Thinking Strategy

PLANNING

There are three strategies within the model which teachers must consider in their planning--Concept Formation, Interpretation of Data, and Application of Principles. Some lessons will lend themselves to all three activities (sometimes over a two- or three-day span of time), while for others, teachers may use only one or two of the activities. For example, there is the flexibility to either have students generate the data (listing, grouping, and labeling) or teachers may instead provide the data to the students, having them focus their attention on interpreting data and applying principles.

Concept Formation

As teachers plan for an inductive lesson, it is frequently helpful to personally go through the process so that problems students may encounter can be anticipated.

Key Questions:	**List**	What do you see? hear? note?
	Group	What belongs together? On what criterion?
	Label	What would you call these groups?

Interpretation of Data

Teachers formulate questions to help students to identify and explore relationships among the data and to make inferences.

Key Questions:	**Identify Relationships**	What do you notice? see? find?
	Explore Relationships	Why did this happen?
	Make Inferences	What does this mean? What would you conclude?

Application of Principles

Teachers formulate questions to enable students to predict and hypothesize, providing defensible rationale for their ideas.

Key Questions:	**Predict Consequences**	What would happen if . . .?
	Support Predications	Why?
	Verify Predictions	What would it take for this to be generally true?

One technique which can be helpful is the Taba Grid (illustrated below). Not only does it facilitate student organization and visualization of the concepts, but it also provides a framework for subsequent questioning.

	Education	Salary Range	Rewards	Working Conditions
Medical Doctor				
Registered Nurse				
Practical Nurse				
Emergency Medical Technician				

IMPLEMENTATION

As teachers implement the Taba Inductive Thinking Strategy, their roles switch from information givers to conceptual guides and process facilitators. In this role, many are surprised by some of what occurs. New ideas and creative possibilities emerge as students take responsibility for their learning, and teachers are able to hear how students think, and to assess where they are conceptually.

DEBRIEFING

It is critical to debrief inductive activities to ensure that students have met the content objectives and that they understand the thinking processes involved. Whatever the content, helping students to verbalize both what they have learned--and how--can both clarify and enhance learning. During the lesson, students have employed logical thinking skills, moving from specific details to the application of principles. Bringing new thinking skills to consciousness can make them more accessible in future activities. Those students who have grasped the thinking patterns can help others by sharing their perceptions, and those students who may still be somewhat unclear about the organizational patterns can often gain insights.

Brantley, H., & Washington, S. M. (1990). Using higher level questioning as a method to improve evaluation of language skills. (ERIC Document Reproduction Service ED 315 772.

Joyce, B., Weil, M., & Showers, B. (1992). Models of teaching. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Nelson, B. J., & Timpson, W. M. (1989). Pathways to learning. Unpublished manuscript.

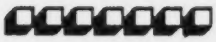
LESSON PLAN

Perennial Problem

What should be done about personal decisions?

Practical Problem

What should be done to help students recognize the personal resources available to assist them in personal decisions?



Objectives

The learner will:

Content: Evaluate how the use of personal resources in personal decision making can impact decisions and the time used to make those decisions.

Process: Evaluate how systematic exploration of ideas assists them in formulating concepts, interpreting data and applying principles when making personal decisions.

Application: Identify how personal resources in decision making impact personal decisions made.

TEACHING-LEARNING INTERACTION

The interaction with students for this lesson will be the Taba Inductive Thinking Strategy. This is a method to help students think logically and develop sequential thinking. The following teaching-learning interaction is an example of the use of this strategy.

INTRODUCTION

Have students keep track of all the decisions they made in a specified period of time. Discuss how frequently decisions are made. Identify areas where teens find decision making hardest. Identify areas where teen decisions are made by someone else.

PHASE I: Below is a list of common teen decisions:

Whether or not to drink alcohol
Which stereo to buy
Which movie to go to
To be sexually active
To go to a party or on a trip with parents
To smoke cigarettes
To do home work
To study for a test
To cut class
Where to apply for a job
What kind of car to drive
What to do on a Friday night
How to ask someone out on a date
Who to ask to the prom
Which classes to take
What college to attend
Whether to work or attend college
When in life is it appropriate to be a parent
Which new outfit to purchase
Where to earn $15.00
Whether to buy new or recycled clothes

PHASE II: Ask the class to group the activities or tasks into categories. Possible questions:

1. Why did you place the activities or tasks into the groups you did?
2. What characteristics do each group have in common?
3. Do you have more decisions to add to the list?
4. Do you want to change any of the decisions from one group to another?

PHASE III: Ask the class to formulate a label for each group that is characteristic of all the decisions in the group. (A discussion centered around personal resources available to teens when making decisions may be appropriate.) Examples: **Time, Energy, Money,** and **Skills**. Some groups may have more than one label.

PHASE IV & V: Identify points and explain terms. Possible questions:

1. Are there similarities between one or more of the groups?
2. What similarities do you see among the groups?
   a. These personal decisions are more difficult to achieve.
   b. These personal decisions involve other individuals.
   c. These personal decisions impact others.
   d. These personal decisions may have negative results.
   e. These personal decisions may have positive results.

PHASE VI: Making inferences. Possible questions:

1. Thinking about what we have discussed and what you see on the board, can you draw any conclusions?

2. What generalizations can you make? Generalizations might include:

   a. Decisions can be made more readily when based on personal resources.

   b. Decisions impact our lives both positively and negatively.

   c. When making personal decisions, teens can either make the most of their time or waste it.

3. What does this all mean? (Teens can more readily make personal decisions if they are based on the personal resources available to them.)

PHASE VII: Predicting Consequences. Based on the generalizations the class has listed, follow up with a hypothetical question:

1. What would you do if you lacked the personal resource necessary to make the personal decision?
   OR
2. What if you were uncomfortable with the personal decision you made?

Have the class explain their individual reactions based on the generalizations they listed.

PHASE VIII: Explaining and Supporting Predictions

1. How do you plan to examine your personal resources prior to making personal decisions?

2. How can individuals look to their personal resources prior to making a decision?

3. How can teens receive assistance from other individuals when making personal decisions?

4. Is personal decision making an area individuals need education in? Why or why not?

PHASE IX: Verifying Predictions. Possible questions:

1. Would the class generalizations hold true in all cases?
2. What must be done to help teens realize the importance of being able to effectively make decisions?

Debriefing

Content:

- How does the examination of personal resources impact the making of personal decisions?
- How has the use of personal resources you have encountered impacted your personal decisions?

Process:

- How was this activity beneficial in examining the impact personal resources have on personal decision making?
- How did you use the process to evaluate the personal decisions you've made and your use of personal resources?

Evaluation Options

- Break students into four groups. Have each group focus on one personal resource (time, energy, money, skills) and list: ways teens can make the most of their decisions, and ways teens can waste time in making their decisions. (This could be titled: Tried and True Teen Time Savers - Tried and True Teen Time Wasters.)
- Have students individually write about a recent personal decision they made that ended up to be the right decision. Have them explain the process they went through to make that decision. Have them then write about a recent personal decision that was the wrong choice. Again, have them explain the process they went through to make that decision. After they have written about both, have them summarize and come to some conclusions about the process they went through to make the two choices.

COOPERATIVE LEARNING STRATEGY

- Roger and David Johnson

What is the Cooperative Learning Strategy?

Many teachers use groupings in the classroom so that students can share ideas, review material, and practice skills. However, cooperative learning is more than putting students into groups. In group learning **interdependence** is possible; in cooperative learning it is required. Accountability in group learning is generally focused only on the group product. Cooperative learning, however, emphasizes both **group and individual accountability**. In group learning, the primary concern is with what students learn **(product)**; in cooperative learning, how **(process)** students learn is of equal importance. In group learning, teachers assume that students have the prerequisite social skills to communicate, negotiate, and work together; in cooperative learning, teachers continually assess group functioning and as students encounter problems, **communication skills are taught.** Finally, in group learning the composition of the student groups is relatively incidental; in cooperative learning, teachers consciously consider groupings so that **heterogeneity** is assured.

Why Use the Cooperative Learning Strategy?

Developments argue persuasively for the value of student interaction, of debate and discussion, to stimulate thinking, and promote growth. By hearing a variety of responses from their peers in cooperative groups, students are challenged to rethink their positions, to assimilate what is said into their existing mental frameworks, and to accommodate the new information and insights, perhaps altering their beliefs. Additionally, by articulating their own positions, students clarify their understandings. Putting ideas into words helps them to reflect on their thinking and develop better reasoning abilities. More importantly, however, problem-solving is enhanced. As students collaborate to address the issues, they quickly realize that shared decisions are consistently superior to individual decisions.

Cooperative learning not only encourages active student learning, it requires it. Because cooperation requires individual responsibility, students no longer remain the passive recipients of instruction. Each student now has an active and important role to play in the learning process. Managed effectively, cooperative learning can provide variety, fun, and a valuable instructional infrastructure among students. Students value each other above all else in schools, and cooperative learning allows teachers to use these peer relationships, constructively channeling them toward instructional goals.

The Johnsons present convincing research about the cognitive outcomes of learning—achievement, problem-solving skills, creativity, greater retention, mastery, and transfer of learning—and the affective outcomes of enhanced self-esteem, interpersonal skills, an appreciation for individual difference, and positive attitudes toward school.

When to Use the Cooperative Learning Strategy

The Johnsons (1975) in their popular book, *Learning Together and Alone*, challenge the traditional pattern of teacher-directed instruction followed by individual student practice. Instead, they recommend cooperative learning as the framework around which instruction is built, using a cooperative goal structure for approximately 70% of the time, individualized instruction for about 20% of the time, and competitive activities about 10% of the time. The Johnsons support individualized instruction when there are sufficient materials and human resources available and when individual skill development is necessary. However, they reject the mythology that individualized instruction is the panacea for learning, that the "ideal" is students studying and working quietly on their own.

Similarly, the Johnsons note that there is an impressive mythology built up around competition, that it is the "stuff of life," that it builds character and drive. Instead, the Johnsons see a world rarely engaged in competition. Even in athletics, team sports get most of the public's attention. At work, individual competition is even more rare. Companies may compete, but individual workers spend almost all of their time in cooperative working arrangements, depending on others in the development of a quality product or service. While the Johnsons do see value in competition as a vehicle to review material, motivate students, and provide variety, they insist that fairness be emphasized, that rules be clear, and that every student have a reasonable chance to succeed. Through collective

accountability, teams can effectively compete against each other and still shield low-performing students from some of the negative effects of losing.

Indeed, any lesson can be structured in a cooperative learning format, and in doing so the "dull sameness" which Goodlad (1984) identified in classrooms across America can be changed. Teachers can use cooperative learning effectively when they want to decrease the traditional emphasis on teacher presentation and independent seatwork, when they want to teach cooperative skills and academic skills simultaneously, when they feel that a class is not working as a team, when individuals with good ideas are being shut out, or when one or two students are monopolizing discussion.

How to Use the Cooperative Learning Strategy

PLANNING

One teacher notes that "planning for cooperative learning is very time-consuming. It takes organization and work, but the benefits are tremendous!" A clear specification of both **cognitive and affective objectives** is critical. Without them, the activity may well deteriorate, leaving the students confused and sometimes out-of-control. The teacher typically formulates objectives relative to the learning task—knowledge, comprehension, application, analysis, synthesis, evaluation—as well as objectives relative to the learning process—active listening, cooperation, trust sharing, negotiation.

Next, the teacher **structures the learning task.** Time is perhaps the most valuable commodity in the classroom, and it is important that the students make the best use of the time available. Clear and precise directions are important so that students know where to start, how to proceed, and when they are finished. In structuring the activity, both group and individual accountability are important. For example, if the end result is to be a group paper or presentation, the teacher may assign a group grade as well as grading individuals on their individual performances. If the students are ultimately to be tested over the material, both individual and group grades (a group average score or a total group score, for example) ensure that each student takes responsibility for learning as well as helping.

There are many options for structuring cooperative learning activities—completion of assignments together so that help is readily available, sharing materials so that a paucity of resources helps rather than hinders instruction, individual student research followed by collaboration with peers to present a coherent presentation.

discussion of key questions so that all students can participate safely, and the list could go on. As teachers become comfortable with cooperative learning, they typically begin seeing cooperative instructional possibilities as the norm rather than as the exception.

Finally, the teacher must make decisions on the **logistics** of the activity—group size, composition, and roles; room arrangement; materials; and time. *Group size* may vary depending on "the desired processes and outcomes of the assignment, the age(s) of the students, the experience(s) students have had in working together, the possibilities for a division of labor, the number of students in class" (Johnson & Johnson, 1975, p. 90). The Johnsons recommend groups of six to ten members—small enough for participation yet large enough for generating a range of ideas. However, many teachers find that with larger groups, management can become a problem with more off-task behavior and greater likelihood of student passivity. Relative to *group composition*, the Johnsons recommend heterogeneous groupings, with a mixture of students with different abilities, motivation, sexes, skills, or leadership abilities. Such combinations can be accomplished through random assignment; however, because teachers know their students' skills and characteristics, often they prefer to determine groupings themselves to ensure balance.

Next, teachers need to decide about *group roles*. In determining group leadership, teachers may elect to let natural leaders emerge, have groups select their own leaders, or assign group leadership. At times teachers arrange groups so that there is at least one natural leader; at other times they may select a student who typically is not in a leadership position, often with surprising results. For certain tasks, it can be helpful for every student to have a role (e.g., leader, recorder, reader, summarizer, runner, evaluator, etc.).

Room arrangement can also affect the success of cooperative activities. The parameters which teachers must keep in mind are: face-to-face seating, access to materials, and ease in monitoring. Prearranged seating may avoid problems that accompany the movement of desks and chairs; however, allowing students to shift furniture for themselves is sometimes more convenient.

In decisions about *materials*, teachers need to determine what conditions will facilitate group interdependence. Sometimes one set of materials per group will be the best choice; under other conditions, it may be important for each student to have materials. When there are additional resources for all groups to use, it is usually advisable to assign one person in the group as a runner. Unnecessary wandering around, talking with other groups, and mischief while students are waiting for materials often unnecessarily disrupt cooperative activities. Finally, the teacher should try to anticipate the *timing* of the activity so that the inevitable problems of students finishing too quickly or too slowly can be avoided.

IMPLEMENTATION

If cooperative learning is new to a group, sometimes some team-building activities can be helpful to get students acquainted with each other and develop a group identity. Developing team names and participating in fun activities together help students to critique and appreciate one another and develop group loyalties. Next, the teacher presents the assignment clearly and concisely, making sure that all students understand the directions. An oral presentation of the assignment is sometimes insufficient since some students listen selectively. Printed directions, either posted or handed out to each group, enable students to function more efficiently without having to continually ask the teacher for directions. Additionally, students should know the criteria for success and the specific behavioral expectations. Some parameters that teachers typically set up are requesting that students use "six-inch" voices and establishing signals to control the noise level (e.g., flicking the lights).

The time consumed in planning for cooperative learning is returned to teachers during the implementation phase. (A note to teachers: Detailed planning is critical as you first implement cooperative learning, but with each new cooperative activity, it gets easier!) With the activity well-planned ahead of time, the teacher's time is freed up to monitor group progress relative to the cognitive and affective objectives, work with groups individually to clarify expectations, make sure that students are on-task and that noise is "productive," serve as a guide and resource, and enjoy watching students take responsibility for their own learning.

DEBRIEFING

Teachers must ensure that the cooperative activity has been productive, that students have accomplished the desired cognitive (product) and affective (process) goals. Group and individual products need to be critiques and valued, not only by the teacher but also by peers in the class when appropriate. Relative to the affective goals of the cooperative activity, it is important that students have the chance to articulate the specific skills that they are developing so that they can establish both personal and interpersonal goals for future activities. Based on the teacher's observations of group and individual functioning, s/he can formulate key questions aimed at cooperation, communication, teamwork, respect, etc.

Sometimes cooperative activities extend over more than one class period. While end-of-activity debriefing is important, taking five minutes at the end of a class period to assess group progress, differentiate frustrations, and set goals for the subsequent day can be equally important. In between class sessions, the teacher can sometimes make adaptations in the lesson in light of this feedback.

Goodlad, J. (1984). A place called school. New York: McGraw-Hill.

Johnson, D. V., & Johnson, R. R. (1975). Learning together and alone. Englewood, NJ: Prentice-Hall.

Kindavatter, R., Wilen, W., & Ishler, M. (1992). Dynamics of effective teaching. White Plains, NY: Longman Publishing Group.

Nelson, B. J., & Timpson, W. M. (1989). Pathways to learning. Unpublished manuscript.

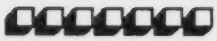
LESSON PLAN

Perennial Problem

What should be done about effective parenting?

Practical Problem

What should be done to help students recognize the importance of understanding the developmental ages and stages of children and how this impacts a child's self-concept?



Objectives

The learner will:

Content: Examine developmental ages and stages of children and the relationship of age appropriate expectations to the development of children's positive self-concept.

Process: Evaluate how exploring information together impacts their learning and understanding of the developmental stages.

Application: Identify areas in their own life where they have been able to develop responsibility and independence and evaluate if this has impacted their self-concept.

TEACHING-LEARNING INTERACTION

The interaction with students for this lesson will be the Cooperative Learning Strategy. This is a method used to increase achievement through group collaboration, enabling students to learn from each other, benefiting both high and low ability students, and improving human relations in the class. The following teaching-learning interaction is an example of the use of this strategy.

Prior to teaching this lesson gather resources that include information about the ages and developmental stages (i.e.: age-toddler, stage-emotional) of children. Students may use the resources provided and explore other information sources.

Divide the class into groups of four to five. Give each group the opportunity to choose a specific age and developmental stage to examine. Write the following group task on the board.

Day One:

Explore the characteristics of the age and developmental stage chosen by group.

Day Two:

Prepare a 15 minute group presentation to be shared with the class. A paper must also be prepared and handed in for evaluation. This information may be presented in any manner they choose (i.e.; role-play, collage, illustrated talk, demonstration). They must include why it is important that parents understand the ages and developmental stages of children and the impact appropriate expectations have on a child's self-concept.

This information could be used to develop a Focus On You project. The presentation would include what the project would be, what they would do, why they would do the project, and an anticipated outcome. The students could acutally carry out the project and use is as a Star Event at FHA/HERO State Conference.

Day Three:

Class presentations and evaluation. Group and individual grades should be assigned to ensure that each student takes responsibility for learning as well as helping.

Debriefing

Content:

- What implications does this information have on effective parenting?
- How will you use the information when making decisions pertaining to parenting?

Process:

- How did working and learning in groups help you become aware of the impact that appropriate expectations of children have on becoming an effective parent?
- How did you use the process to evaluate the knowledge you have gained and the impact that knowledge may have on effective parenting?

Evaluation Options

- Have the students identify areas in their own life where they have been able to develop responsibility and independence and evaluate if this has impacted their self-concept.
- Have the students observe a child and identify the age and developmental stages the child is at. Describe specific observable characteristics and hypothesize any impact on the child's self-concept.

JIGSAW STRATEGY

- Elliot Aronson and Robert Slavin (Jigsaw II)

What is the Jigsaw Strategy?

Jigsaw is a specific form of cooperative learning originally developed by Elliot Aronson and adapted by Robert Slavin. In Jigsaw, "students are assigned to six-member teams to work on academic material that has been broken down into sections . . . Next, members of different teams who have studied the same section meet in 'expert groups' to discuss their sections. Then the students return to their teams and take turns teaching their teammates about their sections" (Slavin, 1990, p. 10). Because the only access to the information is through the "experts," there are definite incentives for team members to attend to the "experts" on their team. In Aronson's approach, information must be discrete and independent. Because of the inter-dependent nature of much academic material, Slavin adapted this technique (Jigsaw II) where all students read all material so that each individual has the context for specific information. Then "expert" groups meet to discuss the specific material for which they are responsible. The use of either Jigsaw or Jigsaw II depends on the nature of the academic material, whether it is independent or interdependent.

Why Use the Jigsaw Strategy?

The benefits of the Jigsaw strategy match those of the Cooperative Learning strategy. In addition to providing a cooperative technique for accessing academic material and achieving the cognitive goals of the lesson, Jigsaw also increases student cooperation, improves relationships among different groups of students, and has a positive impact on student self-esteem. Additionally, students become responsible participants and active learners as they explore information together.

When to Use the Jigsaw Strategy

Whenever material to be learned is in written narrative form, focused on concepts rather than skills, and descriptive in nature, Jigsaw can be an effective instructional choice (Slavin, 1990). Learning materials which are "chunkable" (e.g., chapters in books) lend themselves well to the Jigsaw technique. As teachers examine their curricula, they often can identify instructional material which can be easily adapted to a Jigsaw lesson.

How to Use the Jigsaw Strategy

PLANNING

The Jigsaw activity typically takes two to three days to complete. The first step in planning is to **divide instructional material** into relatively equal segments, one for each "expert" group. If students will complete the reading in class, they should be able to accomplish it within one-half hour. (If it is to be assigned as homework, it can be longer.) For each segment, the teacher prepares an **"expert" sheet** of key questions to guide student reading and provide the format for discussion in the "expert" groups. These questions should be conceptual and thematic in nature rather than focusing on discrete facts that students can merely find by scanning the material.

Next, the teacher **prepares a 10-minute quiz** (to be administered at the conclusion of the Jigsaw activity) for each segment of the material with from 8-12 questions on each "expert" topic. The questions on the quiz should be clear, but not too easy so that the students are challenged to prepare well for their "expert" teaching roles. Additionally, the teacher might plan additional opportunities for students to display their knowledge.

Next, the teacher establishes the teams, heterogeneous groups of from four-to-six members. Students will be members of two groups—an **Expert Group** with whom they work to master the segment of material for which they are responsible and a **Cooperative Team** where they both teach their topic and learn from the other "experts" on the team. As an example, with a class of 25 students where the teacher wants groups of five students, the following configuration would apply.

Expert Groups	Cooperative Teams
11111	12345
22222	12345
33333	12345
44444	12345
55555	12345

Teachers may elect to preassign Cooperative Teams and Expert Groups; they may preassign Cooperative Teams and let students on the teams choose the expert topics; they may arrange for random assignments of both groups (e.g., "numbering off"), or any combination of these options. Whenever activities cover more than one day, teachers need to anticipate adaptations of the activity to account for absences. If an "expert" is absent on the subsequent day, sometimes the teacher can substitute in that role on a Cooperative Team or two Teams can be combined for the teaching-learning activity.

Finally, the **timing** for this activity might be anticipated as follows: Reading—1/2 class period, Expert Group Discussion—1/2 class period, Cooperative Team Teaching—1/2 class period, and Testing—1/2 class period.

IMPLEMENTATION

The teacher first explains the Jigsaw activity to the students from start to finish, so that they are clear about academic and behavioral expectations. Establishing the time parameters is also important to ensure that both Expert Groups and Cooperative Teams pace themselves accordingly. (The teacher may also wish to serve as timekeeper to help in monitoring the activity.) The sequence of activities then proceed as follows: Reading, Expert Group Discussion, Cooperative Team Teaching, Testing.

For the Reading phase of the activity, teachers should be sure that each student has the reading and an "expert" sheet. After all students have completed the reading, Expert Groups meet to discuss the reading based on the questions on the "expert" sheet and any other discussion guides the teacher may choose to distribute. Sometimes the assignment of a discussion leader can be helpful to moderate the discussion and ensure everyone's participation. Each "expert" should take notes for use when s/he returns to the Cooperative Team. During this time, the teacher should move from group to group to clarify tasks and answer questions. Next, the "experts" return to their Cooperative Teams, and each student assumes the roles of both teacher and learner. Again the teacher circulates to ensure productive use of time and on-task behavior. When all groups have finished, the teacher administers the test composed of the questions on each "expert" topic.

DEBRIEFING

The test results provide concrete data relative to the effectiveness of student learning within the Jigsaw activity, and a discussion of the test helps students to solidify their understandings. Additionally, it is important to discuss the process of learning as the students experienced it. Some key questions the teacher might ask the students are: "What teaching behaviors helped you to understand and remember the information? What suggestions do you have for future experiences with Jigsaw? What information was easiest to remember? Why? What information was more difficult to remember? Why? What did you learn about making groups function effectively? Why did you like or dislike this method of learning?

Additionally, it can be helpful to celebrate both group and individual successes, doing so in such a way that cooperation and sharing are highlighted rather than winning and losing.

Slavin, R. E. (1990). Cooperative learning. Needham Heights, MA: Allyn & Bacon.

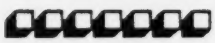
LESSON PLAN

Perennial Problem

What should be done about promoting personal wellness?

Practical Problem

What should be done to help students understand the impact of personal lifestyle decisions on their lifelong wellness?



Objectives

The learner will:

Content: Evaluate what personal lifestyle choices impact individual lifelong wellness.

Process: Evaluate how exploring information together impacts their learning and understanding of lifelong wellness.

Application: Evaluate the implications of personal lifestyle decisions on their lifelong wellness.

TEACHING-LEARNING INTERACTION

The interaction with students for this lesson will be the Jigsaw Strategy which is a specific form of cooperative learning. This is a method to help students become responsible participants and active learners as they explore information together. The following teaching-learning interaction is an example of the use of this strategy. Prior to teaching this lesson the following materials should be prepared:

1. Divide instructional material into relatively equal segments, one for each "expert" group. The expert group may want to gather information concerning cigarette smoking, eating habits, alcohol and drugs, stress control, exercise and fitness, and safety and their effects on lifelong wellness. It is important to include resource materials to help students become experts on their topic.

2. Prepare a short quiz that covers information from each segment of the material chosen for the "expert" sheets.

Day One:

1. Give the class an overview of Jigsaw Strategy using the "How to Use the Jigsaw Strategy" planning stage explanation.

2. Divide the class into equal size heterogeneous groups. These will be called "expert" groups.

3. Distribute one "expert" sheet to each group. Each "expert" group should have a different information sheet.

4. Students meet in expert groups and prepare to teach the information on their sheet to the "cooperative" teams. Encourage students to be creative in their teaching techniques.

Day Two:

Regroup students into "cooperative" teams as shown on the Jigsaw transparency. Each "expert" presents their "expert" information to the group.

Day Three:

1. In the "cooperative" teams have all students take the quiz. Sum the individual scores of the "cooperative" teams and divide by the number of students in the team, thus obtaining the mean score for each group.

2. Regroup students into "expert" groups and ask the following questions: 1. Which "expert" group did best?; 2. Which creative methods of remembering the information worked best?; 3. What would your "expert" group do differently to increase cooperative teams attention?

Debriefing

Content:

- What implications does this information have on lifelong wellness?
- How will you use the information when making personal lifestyle choices?

Process:

- How did working and learning in groups help you become more aware of the impact that personal lifestyle choice have on lifelong wellness?
- How did you use the process to evaluate the knowledge you gained and the impact that knowledge will have on lifestyle choices?

Evaluation Options

- Have students analyze their lifestyle as it relates to the information covered in class. Have the students complete a "Staying Healthy Contract" to make commitments about improvements needed pertaining to personal wellness. Finally, have them devise a plan for improving their lifelong wellness. (This contract would also work well with the "A Better You" unit from the FHA/HERO Power of One project.)
- Assign each student a hypothetical individual with a health problem (i.e.; high blood pressure, diabetes, anemia). Have them create a lifelong wellness plan for that individual including the areas covered in class (i.e.; diet, exercise, smoking or drug use).
- Have students complete the "A Better You" unit from the FHA/HERO Power of One project.

-CONTRACT-

STAYING HEALTHY

Directions: Fill out the form to make a "Contract" with yourself in which you devise a plan to ensure your optimal physical health so as to look and feel great about yourself!!

I, _____, hereby agree to the following terms and will carry them out as a means of promoting good health.

1. I WILL DO THE FOLLOWING:	THIS OFTEN	STARTING DATE	END DATE
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

2. I WILL LIMIT THE FOLLOWING:	STARTING DATE	END DATE
_____	_____	_____
_____	_____	_____
_____	_____	_____

3. I WILL AVOID THE FOLLOWING:	STARTING DATE	END DATE
_____	_____	_____
_____	_____	_____
_____	_____	_____

4. OTHER TERMS:	STARTING DATE	END DATE
_____	_____	_____
_____	_____	_____

MY REWARD FOR CARRYING OUT THIS CONTRACT IS _____

_____

SIGNED _____ DATE _____

WITNESS _____ DATE _____

THELEN'S GROUP INVESTIGATION STRATEGY

- Herbert Thelen

What is Thelen's Group Investigation Strategy?

Thelen's Group Investigation Strategy is a teaching technique based on Dewey's principle of creating a democratic group that defines and attacks problems of social significance. The process of academic inquiry is used to combine the form and dynamics of the democratic process. This model is experience-based and easily transferable to later life situations. Instead of focusing on information processing skills, this strategy helps develop students' idea formulating and problem solving skills.

Why Use Thelen's Group Investigation Strategy?

In this strategy, Thelen creates learning as a social process as well as an academic one. The classroom replicates the larger society with both a social order and a culture. Students learn academic knowledge and engage in social problem solving. This model can nurture interpersonal warmth and trust. It can promote respect for the contributions of others and for negotiated rules and policies. It can also foster independent thinking.

When to Use Thelen's Group Investigation Strategy

The effectiveness of this strategy is the blending of academic inquiry, social interaction, and social process learning. Use group investigation when combining the form and dynamics of the democratic process with the process of academic inquiry. Lessons using this model must be experience-based, with the outcome being easily transferable intellectually to other situations. Group investigation works well when students are conducting a scientific inquiry into the nature of a social process or exploring solutions to a social or interpersonal problem.

How to Use Thelen's Group Investigation Strategy

PLANNING

To use the Thelen Group Investigation Strategy, teachers must examine units of content and develop a puzzling situation suitable for inquiry activities. In designing the puzzling situations:

1. The event must pose a situation which requires an explanation, as opposed to teaching a fact, concept, or generalization.

2. The level of the situation must be appropriately matched with the level of sophistication of the learner.

After designing the puzzling situation, teachers must determine the medium for presenting it. The teacher must create a situation which will bring students into contact with the situation. Use of case studies, observations, popular media articles, or videos could be used to start the process.

Teachers must also determine that adequate resources through the library or other outside resources are available for this model. Students must have access to support systems within the school community and in the community as a whole.

IMPLEMENTATION

The puzzling situation is presented to the students. Students discuss their personal reactions to the situation and listen to those of their classmates. The teacher can assist students by asking questions such as: What is the nature of the problem? What are the factors involved?

Once students have shared their reactions, students create a management plan to determine what information they need and how they will organize to get it. Information gathering is encouraged by using all available resources.

During the implementation process, the teacher's role is one of counselor, consultant, and friendly critic. The teacher must facilitate the group process, intervene in the group to channel energy to educative activities, and supervise the activities so that personal meaning comes from the experience.

DEBRIEFING

Debriefing the Thelen Group Investigation Strategy requires guidance and reflection on the level of individual meaning gained from the investigation of the puzzling situation. Students must examine how they feel about the conclusions and what they would do differently as a result of knowing this information.

Helping students to evaluate what they learned and how they learned it are critical to debriefing this strategy. Students need to analyze their thinking and investigative inquiry. They must examine how this process of inquiry can be transferred to other life experiences or situations.

Dewey, J. (1956). The school and society. Chicago: University of Chicago Press.

Joyce, B., & Weil, M. (1986). Models of teaching. Englewood Cliffs, NJ: Prentice-Hall, Inc.

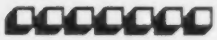
LESSON PLAN

Perennial Problem

What should be done about creating successful relationships?

Practical Problem

What should be done to help students recognize the importance of identifying characteristics of successful marriages and utilize knowledge in mate selection?



Objectives

The learner will:

Content: Analyze the characteristics of a successful marriage.

Process: Evaluate how exploring information together develops idea formulating and problem solving skills.

Application: Understand how perceptions of individuals differ when identifying characteristics of a successful marriage.

TEACHING-LEARNING INTERACTION

The interaction with students for this lesson will be the Thelen's Group Investigation Strategy. This is a method used to create a democratic group that defines and attacks problems of social significance. The following teaching-learning interaction is an example of the use of this strategy.

Ask the students to consider the following statements:

1. Why are some marriages successful and others not successful?

2. Even though individuals realize the importance of compatibility characteristics in mate selection, why are the divorce rates so high?

Ask the students how this information impacts them at this point in their lives.

Step One: Distribute the handout titled Theories of Mate Selection. Give the students a few minutes to read it. Ask for student responses to the information in the handout. Draw attention to the differences in responses - the stances taken, the feelings expressed.

Pose the following questions to elicit students' personal reactions to the handout:

1. Opinion:
   What do you think about the theories presented in the handout regarding mate selection?
   Who should decide if you are compatible with the mate you selected?
   Would you be in favor of all people attending classes to determine mate compatibility?
   Would you be in favor of requiring all people to take a test to determine compatibility before marriage?

2. Relevance:
   What relevance does successful mate selection have for you as taxpayer, future mate, future parent, and member of society?

Step Two: Pose the following questions to elicit students' perceptions of the social issues addressed in the handout:

1. Descriptive:
   What is the purpose of successfully selecting a mate?
   - Is it to marry someone you like?
   - Is it to prevent divorces?
   - Is it to ensure that children will be raised by happy parents?

   Who benefits from the successful selection of a mate besides the people getting married?
   Is there evidence that classes or tests promote positive mate selection?

2. Comparative:
   Should there be classes or tests to determine the compatibility of mates or should these decisions be left to the individuals? Justify your response.
   Are people becoming more or less knowledgeable about what characteristics are desirable in a mate?

3. Historical:
   How have divorce rates changed over time?
   How has education impacted mate selection?
   How has society impacted mate selection?

4. Causal:
What hidden messages do parents give their children about mate selection and/or compatibility?
What indirect messages does society give people about successful mate selection and marriage?

5. Predictive:
What would society be like if every marriage had compatible mates?
What would society be like if all marriages were successful?

Step Three: Divide the class into four groups. Give each group one of the following questions. Tell them their tasks are to: 1) list ways to find data which will answer the questions, and 2) create a plan for using these data to encourage people to examine compatibility issues when selecting a mate.

1. If people examine compatibility issues when selecting a mate, will they have more successful marriages? happier families?

2. What would happen if:
   a. one person agreed to examine their compatibility and the other didn't?
   b. government required compatibility testing prior to marriage?
   c. only those individuals tested to be compatible where allowed to marry?

Encourage students to suggest other questions they would like to explore related to the issue of compatibility and mate selection. Assign groups to those questions.

Debriefing

Content:

- What implications does this information have on successful marriages?
- How will you use the information when making decisions pertaining to marriage?

Process:

- How did formulating ideas and solving problems as a group help you become more aware of the impact compatibility has on mate selection and success in a marriage?

- How did you use the process to evaluate the knowledge you have gained and the impact that knowledge may have on successful marriages?

Evaluation Options

- Have students interview a couple they perceive to be in a successful marriage. Have them discuss with the individuals what has made their marriage successful, if they had examined their compatibility prior to getting married, and how compatible they were.

- Have students research various issues surrounding this topic (i.e.; current divorce rate, compatibility testing, marriage preparation classes, laws surrounding marriage licensure).

THEORIES OF MATE SELECTION

The following are suggested reasons for marrying a particular person:

- **Propinquity**

  a. Person who is close at hand is probably a more likely candidate than the person who is far away. This theory states that people must and usually do meet each other by some form of daily association--same neighborhood, school, church, or office.
  b. The more time a couple spends together during the courtship, the more likely they are to marry. The further apart, the harder it is to spend time together (tendency toward "when I'm not near the one I love, I love the one I'm near").

- **Endogamy**

  a. Subtle pressures to marry within one's own group (racial, religious or socioeconomic; Mennonite, Amish).
  b. Previous (until 1967 Supreme Court decision) laws requiring some races not to intermarry still have cultural influence.

- **Complementary Needs**

  a. Same need in partners, but difference in degree or intensity. For example: A has high dominance need and B has low dominance need; each need complements the other's need and personality.
  b. Or, opposite needs in each partner which when fulfilling own need also fulfills the other's needs. For example: A has need to dominate and B has need to be submissive or dominated by the other.
  c. Somewhat like "opposites attract."
  d. In mate selection, the need-pattern of each spouse will be complementary rather than similar to the need-pattern of the other spouse.

- **Homogamy**

  a. Like chooses like. The theory sets forth that people love, and tend to marry, those who fulfill their needs.
  b. People tend to marry those with the same or similar occupational, educational, racial, economic, and religious backgrounds. For example: two people who are very competitive and need competition, choose each other--also similar age, size, attractiveness, and education.

- **Ideal Mate**

  a. The individual has some more or less tangible idea or ideal of what the perfect mate should be like for him.
  b. Conception of an ideal mate is within the framework of a person's value construct; therefore, when that ideal is found, the person chooses him or her.

- **Parental Image**

  a. Child tends to develop a deep affection or sex role identification with opposite sex parent and unconsciously chooses a mate who resembles that identification. "I want a gal just like the gal that married dear old dad." In certain instances, the tie may be between brother and sister or other siblings.
  b. If hostile relationships with parents have persisted, the individual unconsciously looks for characteristics opposite of those of the opposite sex parent.

- **Values Theory**

  a. Select person with the same value structure.
  b. Put importance on the same things in life.

- **Exchange Theory**

  a. You may marry the person that offers you the greatest rewards at the lowest cost of all who are available to you.
  b. Partners continue involvement in a relationship as long as they derive more profit from that relationship than any other available to them. They discontinue relationships when the costs exceed the rewards unless they have no other alternative relationship. (May choose to suffer rather than be alone.)
  c. Costs - unpleasant consequences
     Rewards - enjoy services provided, looks, words, prestige
     Profit & Loss - whichever is greatest - if rewards are greater than costs, have profit - vice versa, loss.
  d. Exchange concepts operate at three levels of dating relationship:
     1. Who can date whom?
     2. Conditions of dating relationship.
     3. Decision to marry.

Source: Abstracted from Knox, David (1994). Choices in relationships: An introduction to marriage and family. Minneapolis, MN. West Publishing Company.

SOCIAL SCIENCE INQUIRY STRATEGY

- Byron Massialas and Benjamin Cox

What is the Social Science Inquiry Strategy?

The Social Science Inquiry Strategy is concerned with developing students' capacity to inquire into and reflect on the nature of social life, particularly the course of their own lives and the direction of their society. Three essential characteristics of this model are the social aspects of the classroom including an open climate of discussion, the emphasis on hypotheses as the focus of the inquiry, and the use of fact as evidence. This is an inquiry model because of the inductive reasoning required and the active involvement of students in the process.

Why Use the Social Science Inquiry Strategy?

Massialas and Cox believe that the educational process must deal with the value controversies that are necessary in a pluralistic democracy, the difficulties that arise in a multicultural environment, and the need to require systematic cooperation of all citizens. This strategy assists students to reflect on values and to participate with others in the creative reconstruction of society.

When to Use the Social Science Inquiry Strategy

Learning facts in conjunction with developing solutions to significant social problems is the primary objective of this model. Students learn how to reflect on significant social problems by defining problems, working with others, and forming conclusions on the basis of data.

Content and process are closely aligned. Students are examining content while developing process skills. The model is appropriate for introductions or conclusions of units. As an introduction, an assessment can be made of student knowledge and process skills. As a conclusion, the model provides opportunities to use knowledge and process skills to examine the social problems.

How to Use the Social Science Inquiry Strategy

PLANNING

Teachers must examine the content of units to be taught and develop from them social problems which are suitable for inquiry. The social problems may arise from a contemporary situation, from a reflection on a reading, from a conflict within the classroom, or from any number of social situations. It is critical that all concerned consider the situation a problem and that it can be summarized as a problem.

In preparing for the lesson, teachers must consider ways to assure an open discussion. Students must sense that all views and statements are accepted. Teachers must also access resources that will assist students in the collecting of data.

IMPLEMENTATION

The teacher initiates the inquiry by orienting the students to the dilemma. The teacher works to help the students become sensitized and develop a statement of the problem which defines its elements and can be accepted by all as a starting point. Next is the development of hypotheses. The hypotheses serves as a guide to the inquiry that follows.

During the inquiry, students first define and clarify the hypothesis they choose to investigate. Then students explore the hypothesis in terms of its assumptions, implications, and logical validity. Questions could include: Does it make sense on its own terms? What assumptions does the hypothesis make? What are the implications if the hypothesis is true?

Data gathering of facts and evidence to support the hypothesis is the next critical step and will require the availability of appropriate resources. Finally, students form a generalized expression or solution based on their investigation. The generalization will not be an absolute, but the best possible statement based on the inquiry.

DEBRIEFING

Students are actively involved in all phases of the Social Science Inquiry Strategy. Students are responsible for reaching the final generalization and sharing the basis for their decisions. In addition to discussing the solutions they have generated, students also need to analyze the thinking process they used in their pattern of inquiry. Students need to verbalize what they learned and how they learned it.

Joyce, B., Weil, M. (1986). Models of teaching. Boston: Allyn and Bacon.

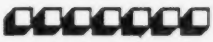
LESSON PLAN

Perennial Problem

What should be done about the effects of humans on their environment?

Practical Problem

What should be done to help students recognize the importance of recycling to preserve our environment?



Objectives

The learner will:

Content: Analyze the effects individuals can have on the environment when choosing to recycle.

Process: Evaluate how working together cooperatively through inquiry promotes a reflection on values and the creative reconstruction of society.

Application: Understand how perceptions of individuals differ when considering whether or not to recycle.

TEACHING-LEARNING INTERACTION

The interaction with students for this lesson will be the Social Science Inquiry Strategy. This is a method concerned with developing students capacity to inquire into and reflect on the nature of social life, particularly the course of their own lives and the directions of their society. The following teaching-learning interaction is an example of the use of this strategy.

Step One: The teacher initiates the inquiry by orienting the students to the dilemma. The class has been studying the impact recycling has on the environment. They are especially interested in learning why some individuals choose to recycle and others don't.

1. The teacher works with the students to develop a statement of the problem which defines the elements and can be accepted by all as a starting point.
2. The teacher and students brainstorm to develop hypotheses that serve as a guide to the inquiry.

Step Two:
1. Students (in groups or as a class) define and clarify the hypothesis they choose to investigate.
2. They explore the hypothesis in terms of its assumptions, implications, and logical validity.

Step Three: Students (in groups or as a class) gather data, facts, and evidence to support the hypothesis they have chosen to investigate.

Step Four: Students form a generalized expression or solution based on their investigation.

Debriefing

Content:

- What implications does this information have on recycling and the impact on environment?
- How will you use the information when making decisions pertaining to recycling?

Process:

- How did the reflection on values and participation with others impact the outcome of the discussion?
- How did you use the process to evaluate the knowledge you have gained and the impact that knowledge may have on your views of recycling?

Evaluation Options

- In groups, have students research one of the following: global warming, depletion of ozone layer, acid rain, air or water pollution, or the garbage glut. Have them discuss any bills that have been passed related to the environmental problem. They should give an evaluation of the bill and it's effectiveness. You may have them write to congress about a particular environmental issue.
- Plan an environmental project to be completed within your community

SUCHMAN INQUIRY STRATEGY

- R. J. Suchman

What is the Suchman Inquiry Strategy?

Helping student to inquire independently and in a disciplined way is the goal of the Suchman Inquiry Strategy. This strategy is labeled an inquiry strategy because it employs both inductive and deductive reasoning and students are actively involved in the solution to a problem. The uniqueness of the Suchman strategy is that the problem is identified by the teacher and designed to motivate students. The strategy is process oriented in that students gather data through questioning rather than manipulation of data.

Why Use the Suchman Inquiry Strategy?

The Suchman Inquiry Strategy, like other inquiry strategies, presents students with a puzzling event. Solving puzzles, according to Suchman, naturally motivates students and provides the opportunity to teach the procedures of disciplined searching. Students are taught scientific procedures and made conscious of their own process of inquiry.

Conveying to students the attitude that all knowledge is tentative is an important outcome of the Suchman Inquiry Strategy. Students are encouraged to believe that most problems have several plausible solutions. They experience and learn how cooperative inquiry with their peers enriches thinking and fosters tolerance of alternative points of view.

When to Use the Suchman Inquiry Strategy

In this strategy, a primary content outcome is the development of explanations. A problem which needs explanation must be presented for students to explore. Suchman suggests episodes that have surprising encounters to make it difficult for students to remain indifferent to the encounter. The students naturally want to know why.

A close interaction between content and process is necessary. Students are forming an explanation while developing process skills. The primary process goal is to help students improve their ability to relate data to the explanations they have formed. This strategy is appropriate in introducing and concluding units of study. As an introduction, the problem presented can assess students' knowledge and understanding of the problem. As a conclusion, the problem provides opportunities to use knowledge gained to examine the problem.

How to Use the Suchman Inquiry Strategy

PLANNING

When planning, teachers must look at given units of content and develop from them problems which are suitable for inquiry activities. In designing problems, the teacher must consider:

1. The event must pose a problem which requires an explanation, as opposed to teaching a fact, concept, or generalization.

2. The level of the problem must be approximately matched with the level of sophistication of the learner.

3. The curiosity and motivation of the student are enhanced if the problem is prepared in a way which makes it appear discrepant.

4. The event focuses the student on a particular problem rather than a set of problems in general.

After designing the problem, teachers must determine the medium for presenting it. The teacher must create an experience which will bring students into contact with a problem evoking situation. Use of demonstrations, graphs, tables, maps, case studies, and videos could be employed to start the inquiry process. The medium should be selected after the problem has been identified.

IMPLEMENTATION

The presentation of the problem by the teacher begins the implementation phase of the strategy. The teacher should make a special effort to insure that all students understand the question to be answered or the problem to be solved.

After presentation of the problem, students begin hypothesizing and gathering data. Although pure scientific procedures begin with hypothesizing, in this model students may begin with either hypothesizing or data gathering. The goal of the strategy is to help in the development of thinking skills which can be accomplished either way.

Data gathering in the Suchman Inquiry Strategy is accomplished by students asking questions and the teacher answering them. The basic rules that structure the inquiry session is that students are required to gather data by asking questions that: 1) can be answered yes or no, and 2) can be answered through the process of observation. Thus, students are responsible for forming explanations and searching for possible answers. They also must make inferences from observable data. Once data is gathered, a hypothesis or several hypotheses are formed and aid in giving direction to the inquiry.

In addition, two other procedural rules during the inquiry process are: 1) Once called on, the student may ask as many questions as he/she wishes before yielding the floor, and 2) Students should be encouraged to work together whenever possible. These rules allow for the orderly sequence of questions and facilitate cooperation.

DEBRIEFING

When the puzzle or problem is adequately explained using all existing data, closure is reached. Students are responsible for reaching and explaining the closure.

Finally, students need to analyze their pattern of inquiry. Students examine which questions were helpful and which were not, or the type of information they needed that they did not have. Students also examine the cooperative and rigorous social system that is established in the classroom throughout the inquiry process.

To separate individual performance from group performance, evaluation efforts can take several approaches. One example would be a case study where students form hypotheses, data-gathering questions, and observations from the event. Another way would be to provide them with the script from an inquiry session and a possible explanation, and ask them to determine the relationship of data to that explanation.

Joyce, B., Weil, M., & Showers, B. (1992). Models of teaching. Boston: Allyn & Bacon.

LESSON PLAN

Perennial Problem

What should be done about establishing positive peer relationships?

Practical Problem

What should be done to help students recognize the importance of identifying characteristics of positive peer relationships?

Objectives

The learner will:

Content: Analyze the characteristics of positive peer relationships.

Process: Evaluate how working together cooperatively through inquiry with peers enriches thinking and fosters tolerance of alternative points of view?

Application: Understand how perceptions of individuals differ when identifying characteristics of positive peer relationships.

TEACHING-LEARNING INTERACTION

The interaction with students for this lesson will be the Suchman Inquiry Strategy. This is a method used to help students improve their ability to relate data to the explanations they have formed. This model is appropriate in introducing and concluding units of study. Remember the teacher must pose a puzzling problem for inquiry. The following teaching-learning interaction is an example of the use of this strategy as a way to conclude a unit of study on creating positive peer relationships.

Step One: Present the following situation to the class:

Kelly and Tracy were two students in the ninth grade. Both were good students, polite, and did their classwork willingly and promptly. They appeared to be alike in several aspects. However, Kelly was always included in

activities with classmates and was asked to join in activities outside of school. Tracy was usually left out and very much alone. Why when Kelly and Tracy were so similar in most respects, would they be treated so differently?

Step Two: Lead students through the data gathering and questioning process. Basic rules include:

1. Questions can only be answered with a yes or no response by the teacher.
2. Questions can be answered through the process of observation.
3. The student may ask as many questions as he/she wishes before yielding the floor.
4. Students should be encouraged to work together whenever possible.

Step Three: Closure:

1. Students are responsible for reaching and explaining the closure.
2. Students need to analyze their pattern of inquiry. They should examine which questions were helpful and which were not, or the type of information they needed that they did not have.

Debriefing

Content:

- What implications does this information have on positive peer relationships?
- How will you use the information when making decisions pertaining to peer relationships?

Process:

- How did the cooperative and rigorous social system that is established in the classroom throughout the inquiry process impact the outcome of the discussion?
- How did you use the process to evaluate the knowledge you have gained and the impact that knowledge may have on positive peer relationships?

Evaluation Options

- Have students create a case study and have each student form hypotheses, data-gathering questions, and observations from the event and report in written form.
- Have students examine themselves and determine characteristics they possess that would lead to positive peer relationships or areas within themselves needing improvement.
- Have students develop a project using the STAR Event Interpersonal Communication. This could be done for class and/or for competition at the State Conference.

GAMES and SIMULATIONS STRATEGY

What are Educational Games and Simulations?

Games and simulations are training devices that mimic reality very closely, but in which the complexity of events can be controlled. The primary difference between a simulation and a game is that a simulation allows the learners to perform exactly as they would in the real world. (Flight simulators and driving simulators are examples.) Games, on the other hand, are designed to have one winner and use the enthusiasm and competitive nature of individuals to help them arrive at a conclusion that is not directly related to the outcome of the game.

Why Use Games and Simulations?

Learning by doing, on-the-job training, performance assessment, and student teaching are all terms for techniques which attempt to use real world situations to teach and to assess skills and abilities. Such techniques are attractive because the learning is "real" - it is not contrived. However, most real world situations are complex and sometimes dangerous. Games and simulations can be used to make learners' tasks much less complex than they are in the real world, allowing the learners to master the tasks more easily. In addition, games and simulations permit students to learn from self-generated feedback.

When to Use Games and Simulations

Teachers can use games and simulations when they want to involve students in situations similar to a life experience without the complexities and possible dangers of the real-world.

How to Use Games and Simulations

PLANNING

Teachers must judge whether the game or simulation is suitable for their students or when modifications are necessary. Most learners enjoy their roles in a game or simulation; however, developing successful games and simulations is a difficult and time-consuming process. Following are some of Ornstein's guidelines for incorporating games and simulations into teaching:

1. Have an educational objective.
2. Keep this as your purpose: To enable students to understand the nature of a problem and how to solve it.
3. View the game or simulation as an experience for learning content in a short period of time.
4. Relate the game or simulation to the content you wish to teach; clarify this content for the students.
5. Only include significant content variables, instances, or problems in the simulation.
6. Keep rules limited, concise, and clear.
7. Make sure that rules are understood with relative ease by the students, and introduce the rules in a short period of time.
8. Make the motivation for winning clear, and make the objective for how to win clear.
9. Set up the game or simulation in a way that encourages all participants to be involved.
10. Use some sort of evaluation, feedback, or discussion to determine if your objective for using the game or simulation as a teaching tool has been met.

IMPLEMENTATION

Review the time commitments and room logistics. Often times, games will require more than one class period. Other times, games will only require a few minutes, yet can lead to startling discoveries by students. Typically, the management of games is more difficult than regular classroom management due to the number of items needed for the

game. Check to be sure that you have enough copies of rules, enough playing pieces, enough score sheets and other items needed to implement the game.

DEBRIEFING

Debriefing is critical when performing games and simulations. Often times students miss the intent of the game or simulation and want to continue to focus on one of the following:

- the game rules,
- who won or lost the game,
- who did what to whom during the game, or
- why they didn't perform well during the game.

It is important for the teacher to end the game and to focus discussion on the purpose of the game and tie the game back to the instructional objectives for the course or activity.

The debriefing can ask questions about the use of games as well as help the students focus on the purpose of the game.

Johnson, I. H. (1988). Instructional strategies for technology education: Games and simulations. Mission Hills, CA: Glencoe Publishing Company.

Ornstein, A. C. (1990). Strategies for effective teaching. New York: Harper & Row, Publishers.

LESSON PLAN

Perennial Problem

What should be done about establishing positive peer support to promote leadership and teamwork in an effective FHA/HERO chapter?

Practical Problem

What should be done to promote leadership and teamwork?

Objectives

The learner will:

Content: Analyze the natural barriers that work against people working in groups.

Process: Evaluate the use of games as a method to develop teamwork and leadership.

Application: Identify at least two methods to reduce competition between people in groups.

TEACHING-LEARNING INTERACTION

The interaction with students for this lesson will be the Games Strategy. This is a method concerned with developing students capacity to inquire into and reflect on the nature of social life, particularly the course of their own lives and the directions of their society. The following teaching-learning interaction is an example of the use of this strategy.

Teams for this game will consist of two to three participants. Four teams, composing one trading group, will play this game around each table.

Step One:

Separate the learners into four teams at a table. There should be no more than three participants per team. The four teams at each table will represent one trading group. (See diagram on the handout titled The Soda Trader Rules Sheet.)

Step Two:

Pass out the handouts titled The Soda Trader Rules Sheet and The Soda Trader Scoring Sheet.

Step Three:

After a few minutes, read the following:
"All four teams must place the can to be traded on the table at the same time, when I give you the command. Your trading decision should be secret until you place your can on the table. After each round, I, as the facilitator, will give you a few seconds to record your scores and to decide as a team on your strategy for the next trade.

There are three bonus rounds: 5, 7, 10. In round 5, each team score will be multiplied by 3. In round 7, the team score will be multiplied by 5. In round 10, the team score will be multiplied by 10. After we play ten rounds, we will see which team has won the most money."

Step Four:

Begin the game and proceed through the ten rounds. Remember to multiply by the appropriate number during the bonus rounds.

Debriefing

Content:

- What was the purpose of this game?
- Does this game have anything to do with promoting leadership and teamwork?
- How did you feel when a team did not work toward the goal of the entire trading group at the table?

- How does the natural competitive process that we just experienced occur within our FHA/HERO chapter?
- What are some ways to reduce the natural competitive nature between individuals and teams?

Process:

- Did you enjoy being a learner in a game situation?

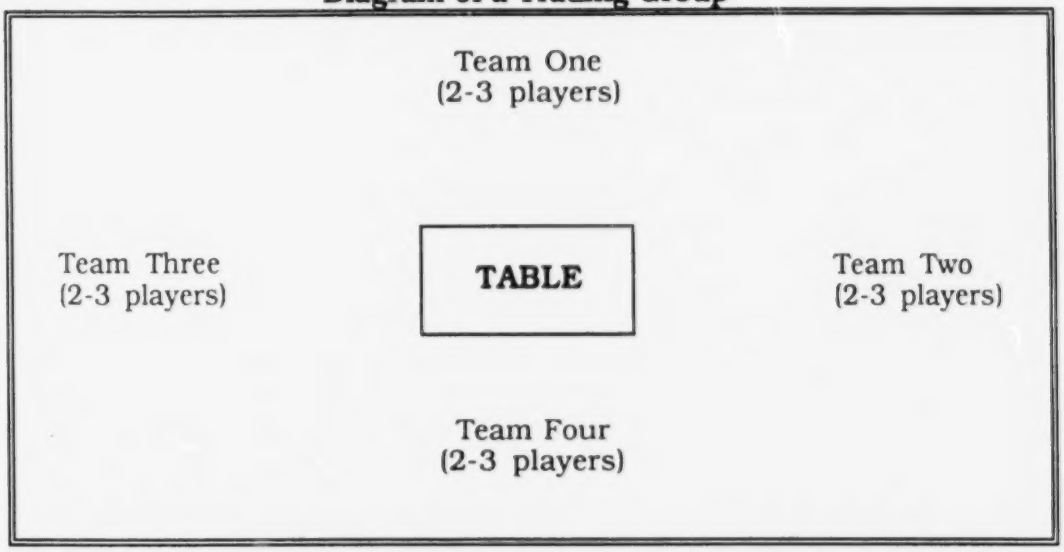
Evaluation Options

- Have students write a one-page paper on ten ways to reduce competitive feelings between individuals and subgroups in an FHA/HERO chapter.
- Have students plan an activity for their FHA/HERO organization that would promote teamwork and cooperation. After the completion of the activity discuss their reactions.

The Soda Trader[1] Rules Sheet

Objective: The objective of this activity is to make as much money for your team as possible.

Diagram of a Trading Group



Rules: At a signal from the facilitator, you and your team will reveal your decision to trade either COKE or PEPSI. Your team will make money or lose money, depending on what the other three teams in your trading group decide to trade.

1. If every team decides to trade COKE, each team loses $1,000.
2. If every team decides to trade PEPSI, each team wins $1,000.
3. If one COKE and three PEPSIs are traded, the COKE wins $3,000 and the PEPSIs lose $1,000 each.
4. Any other combination causes each team to lose $1,000.

Instructions:

1. Take time to familiarize yourself with the rules and scoring sheet now.
2. The facilitator will give you and your team a few seconds to record your winnings or losses after each round and to decide what your next trade will be. Your trading decision should be secret until you place your can on the table. All four teams must lay the can to be traded on the table at the same time (when the facilitator gives the command). We will play 10 rounds, then see which team has won the most money.

---

[1]Special thanks to Michael K. Daugherty, technology teacher educator from Illinois State University, Normal, Illinois, for contributing the idea for The Soda Trader.

The Soda Trader Scoring Sheet

Round	Reward	Balance
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Bonus Rounds:

5 - Reward x 3

7 - Reward x 5

10 - Reward x 10

Team Name: _____

SYNECTICS STRATEGY

- William Gordan

What is Synectics?

Synectics is a creative problem solving process that uses irrational analogies to assist in the development of creative and critical thinking skills. The term synectics comes from the greek roots, syn, meaning "bringing together" and ectics, meaning "diverse elements." By using the minds seemingly irrational elements of thought, this teaching strategy sparks new ideas, that in the end, generate plausible solutions to real problems.

Why Use the Synectics Strategy?

Recent literature emphasizes the importance of helping students to think creatively (Gloeckner & Love, 1992; Carnevale, Gainer, & Meltzer, 1992; Scans, 1991). Yet, teachers are not typically trained in ways of teaching creative thinking processes. Synectics gives us a process to help unleash students from their traditional thinking constraints. Equally important, once the synectics strategy has ended, it is highly likely that students will continue connecting ideas in irrational ways to help obtain rational solutions.

When to Use the Synectics Strategy

Synectics is best used when students are bogged down in routine classroom activities. This creative approach will require a classroom that can operate at high noise level and a chaotic state. In order to use synectics, teachers need to be in a non-directive state of mind. Teachers must be willing to release control to the students in the class during a synectics period. In order to use synectics, teachers need to put the "problem" aside temporarily.

How to Use the Synectics Strategy

PLANNING

First, the teacher must identify the problem that the class will attack. This problem should be clearly stated to the learners. The second step is to place that problem out of the teacher's and learners' minds. The third step is to use seemingly irrelevant analogies, conflicts, or Chinese overlays, to establish a creative thinking environment. The fourth step is to force-fit the irrelevant analogies, conflicts, or overlays together with a problem to allow the students' minds to invent ways of connecting the problem to the seemingly irrelevant materials.

There are four general **stretching** exercises that can be used to help get the class started in the synectics process.

1. ***Direct analogy*** - Make a simple comparison between two objects which seem disconnected. For example: How is technology like a salad? How are your parents like frozen yogurt? Which is softer, a whisper or a puppy's fur?

2. ***Personal Analogy*** - Place yourself, in your mind, into an object or concept. However, in order to use personal analogies, you need to loose some of yourself as you transport yourself into other objects or concepts. For example: Be a cloud. Where are you? What are you doing? How do you feel when the sun comes out and dries you up? You are your favorite book. Describe yourself. How do you feel when eyes look at you? Be a family budget. How do you feel when you are balanced? How do you feel when you are in the red?

3. ***Compressed Conflict*** - The idea of compressed conflict is similar to that of an oxymoron. That is, that two concepts or ideas that seem to be in direct conflict with each other. For example: friendly-foe, freshly-stale, or intelligently-dumb. A spin-off of compressed conflict is to put the two conflicting terms in a question or sentence format. For example: What food is like a smile and a frown? What technology is shy and aggressive?

4. ***Chinese Overlay*** - It is common in the Chinese culture to use phrases that would seem to be in conflict by American standards. Examples would include: A god greater than God; beauty above beauty; a love greater than the greatest love. How can we acquire knowledge greater than knowledge? How can we be happier than the happiest? How can we be uglier than the ugliest?

IMPLEMENTATION

The initial steps include:

1) identifying a problem,
2) placing the problem aside temporarily, and
3) using the stretching exercises explained above to warm up the classroom.

Next, identify a seemingly irrelevant material and have the students focus in a relaxed manner on that object, still keeping the problem in the background of the classroom activity. One way to accomplish this is to select a random object such as a pencil. Have the student write five sentences using each of the four stretching exercises above.

Examples would include:

Direct Analogy - How is a school like a pencil? How are your parents like pencils?

Personal Analogy - Be a pencil. What is it like to be sharpened? What is it like when your eraser is gone?

Compressed Conflict - A sharp-dull pencil, a lead-ink pencil, a number 2-.01 pencil.

Chinese Overlay - A sharper than the sharpest pencil; a pencil that tells truth about truth.

Each of these steps requires forcing our minds past the fear of not making sense. With deliberate training in synectics, we hope to re-awaken the child's eye that each of us had before we learned how to close our minds.

The last and most important part of synectics is to bring the problem into this creative environment. For example, the teacher might pose the problem: What can be done to reduce teen pregnancies. Have the class go through each of the four stretching exercises, but relate the stretching exercises to the problem at hand.

DEBRIEFING

It is essential to leave enough time during the class activity to debrief the process of synectics. It is sometimes difficult for teachers and students to spend time reflecting and thinking about the process and teaching strategies used in classroom activities. If, however, we plan to make synectics more than just a one- or two-day activity, the debriefing becomes the essential component. Some questions which you can ask the students to analyze their feelings and thinking processes are as follows:

Which stretching activity was the most difficult for you?

Which stretching exercise was easiest for you to use?

How did the synectics successfully get you to think about the problem in new and different ways?

What are some other ways that you can think of where using synectics would help you solve a problem?

Chiarelott, L. (1990, February). Metaphorical thinking as a thinking skill. Annual Association of Teacher Educators, Las Vegas, NV.

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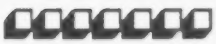
LESSON PLAN

Perennial Problem

What should be done about effective parenting?

Practical Problem

What should be done to help students recognize the role(s) a parent or guardian plays in their lives?



Objectives

The learner will:

Content: Analyze the special characteristics needed to be an effective parent or guardian.

Process: Evaluate how this creative problem solving process using irrational analogies assist in the development of creative and critical thinking skills.

Application: Understand how perceptions of individuals differ when identifying characteristics of effective parenting.

TEACHING-LEARNING INTERACTION

The interaction with students for this lesson will be the Synectics Strategy. This is a method that assists in the development of creative and critical thinking skills. The following teaching-learning interaction is an example of the use of this strategy.

Phase I: Substantive input

You have been studying about parenting. Today we are going to look at what you think it means to be an effective parent or guardian.

Phase II: Direct analogy

Using the overhead and various colored markers ask the students "How is a Parent Like a Quilt?" As the students brainstorm all of the possibilities the teacher puts the answers

on the overhead in a crazy quilt pattern using the different colored markers.

Phase III: Personal analogy

Ask the students to imagine themselves as a quilt. What would they feel like, look like, do? Add the answers discussed to the quilt being developed on the overhead.

Phase IV-V: Comparing analogies and explaining differences

Examine the characteristics identified through the quilt analogies and determine what the similarities and differences were between self and parent analogy?

Phase VI: Reexamination of original task

Ask students if there are any other characteristics they would like to add to the quilt? Have students examine the characteristics and determine which they feel they possess. Ask students what other objects could provide an effective analogy to identify parenting characteristics.

Debriefing

Content:

- What implications does this information provide when making decisions about parenting?
- How will you use this information when making decisions pertaining to parenting?

Process:

- How did the Synectics strategy help you think about parenting in a new and different way?
- What are some other ways the synectics strategy may help you solve problems?

Evaluation Options

- Have students interview a parent they perceive to possess characteristics of an effective parent. Have the student ask the parent(s) what their beliefs about parenting are, why they might be perceived as being an effective parent, and what characteristics they believe make for effective parenting.

MORAL DEVELOPMENT STRATEGY

- L. Kohlberg

What is the Moral Development Strategy?

This model is based on two assumptions. First, that individuals differ in their moral and ethical views, and second, that there are different levels of moral development. By using moral dilemmas, this model encourages students to think through societal issues, and at the same time, focus on the issues and stages related to moral development.

Why Use the Moral Development Strategy?

Without question, the use of moral development in the classroom is a controversial topic. It has been a controversial topic since Socrates and Plato were reemphasized by Dewey in the early 1900s, and then again by Kohlberg in the 1970s, and continues to be a topic of public discussion in the 1990s. Although moral development is a controversial issue, moral and ethical development is nearly always listed as one of the purposes of education. Nearly every state, school district, and individual school emphasize the need for moral development in their purpose of education, mission statements, visions, or district goals.

When to Use the Moral Development Strategy

Moral development is best used when it fits naturally into the teacher's outcomes for the class. Due to the sensitivity involved in moral development and the potential litigation that can surround the use of moral development, the teacher should use extreme caution in selecting the topics or scenarios to be used with moral development. Avoid the use of locally sensitive issues. Remember that although you are trying to assist your students in understanding the different levels of moral development, some parents may not, themselves, understand levels of moral development. More importantly, some parents will be at a lower level of moral development than their children.

How to Use the Moral Development Strategy

Although a variety of models of moral development can be used, this monograph will focus on the use of Kohlberg's model of moral development. Kohlberg has based much of his writing on the work of Plato, Jean Piaget, and John Dewey. As with all issues around moral development, Kohlberg's model is controversial. However, the Kohlberg model has been the focus of decades of research and even critics of the Kohlberg model agree that the model is useful to help individuals think about stages of moral development, as well as a useful tool to help individuals focus on issues around moral dilemmas.

PLANNING

The first and most important task for a teacher using the Kohlberg model of moral development is to clearly understand Kohlberg's levels of development. Lawrence Kohlberg draws from John Dewey's Theoretical Levels of Moral Development, and the interview, observation, and data gathering techniques described by Jean Piaget. Kohlberg describes three levels of moral development: Preconventional, Conventional, and Postconventional. Within each of these three levels, there are two stages. Therefore, there are six stages involved in the Kohlberg Moral Development Strategy. Kohlberg believes the following three imperial characteristics: 1) each stage is an organized system of thought, individuals are consistent in level of moral judgement, 2) the stages are sequential, under most conditions, movement is always forward, never backward, individuals rarely skip stages; movement is almost always to the next higher stage, 3) the stages are hierarchical, it includes comprehension of the lower stages of thinking. The following chart briefly outlines Kohlberg's stages of moral development.

A. Preconventional Level

At this level, youth are responsive to cultural rules and labels of good and bad, right and wrong, but they interpret these labels in terms of physical consequences. This level is divided into the following two stages:

1. Punishment and Obedience Orientation - The physical consequences of actions determine the goodness or badness of that action.

2. The Instrumental Relativist Orientation - Correct actions consist of those that satisfy one's own needs and occasionally the needs of others. A useful analogy for understanding this stage is the "you scratch my back, I'll scratch yours."

B. Conventional Level

At this level, maintaining the expectations of the individual's family, group, or nation is perceived as valuable in its own right, regardless of the immediate or obvious consequences. At this level, there are the following two stages:

3. The Interpersonal Concordance "Good Boy/Good Girl" Orientation - Good behavior is that which pleases or helps others. There is conformity to stereotypical images as to what is the majority behavior. This stage is characterized by such phrases as "She means well," "She's nice, therefore, she's right."

4. The Law and Order Orientation - The authority, fixed rules, and the maintenance of social order become important. Right behavior consists of doing one's duty, showing respect for authority, and maintaining a given social order for its own sake.

C. Postconventional Level/Autonomous Level/Principle Level

At this level, there is a clear effort to define moral values that have validity apart from the authority of groups. The two levels of this stage are:

5. The Social Contract/Legalistic Orientation - "Right" actions tend to be defined in terms of general individual rights. There is a clear awareness of the relativism of personal values and opinions. There is a similar emphasis upon the procedural roles for reaching consensus. Aside from the constitutionality and democratically-agreed-upon rights; personal values and opinions are also acceptable. The emphasis is upon the legal point of view, but with consideration of the social value of the legal view. This is the "official" morality of the American Government and Constitution.

6. The Universal Ethical Principle Orientation - "Right" is defined by the decision of conscience in accordance with self-chosen ethical principles. This stage appeals to logic, comprehension, universality, and consistency. These principles are abstract and ethical (example: the golden rule). They are universal principles around the equality of human rights and the respect for human beings as individuals.

- Kohlberg, 1971, pp. 164-165.

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IMPLEMENTATION

The teacher must be able to establish a non-threatening classroom environment where students feel safe. The teacher may want to consider removing power issues between the teacher and students with an open discussion on how students will be evaluated for the day. Such comments as "Today's activity will not be graded," or "Everyone receives a grade of 'A' for today," or other comments that will help assure the students that their open and honest discussion will not count against them, will also be helpful.

A moral discussion is open-ended. The conversation needs to center on the reasoning used to justify recommendations rather than the action itself. Hence, there are no right and wrong answers. There is no attempt to reach an agreement on a solution to a dilemma. Students talk mainly to one another. It is important for the teacher to back away from most discussions. Students should question and challenge one another's reasoning, and the teacher intervenes where necessary to keep the discussion focused on the dilemma. Seating the students in a face-to-face seating arrangement, such as a circle, will establish a relaxed atmosphere, and encourage students to speak more freely.

The teacher's role is to encourage students who reason at stages that are next to each other on the Kohlberg Scale, to challenge one another's arguments. In addition, the teacher guides discussion to produce appropriate questions that stimulate moral reasoning.

At first it may seem difficult to identify Kohlberg's stages, however with a little practice, the identification process becomes easier. You can help direct the students through the process by following these four major steps:

1. Present a scenario, article, case study, or event that proposes a moral dilemma. When selecting a moral dilemma, remember the age, knowledge base and interest of the students. The teacher can ask students to summarize the situation, identify characteristics of the story, and clarify terms and facts. This clarification process should only take a few minutes, however, it eases the students' concerns over not understanding the issue involved in the dilemma.

2. The next step requires the students to identify the precise nature of the dilemma.

   Students take a tentative position on the dilemma. Have them state one or two reasons for their position. Then ask the students to share their responses. As the students share their responses, the teacher will be able to

categorize students into different stages of Kohlberg's moral development.

3. Form small groups to discuss the dilemma in more detail. Talking about dilemmas in small groups is particularly helpful for shy students who often find it easier to express their ideas in this setting. Allow approximately 10-15 minutes for this discussion. During the small group meetings, the teacher should move from one group to another, insuring the students are focusing on the assigned task, and to prevent students from going on severe tangents.

4. The majority of time should be devoted to full class discussion about the dilemma. Once again, the seating is important. The students should be in one large group where they can see one another, and the teacher should be seated as part of the group.

A large group discussion usually begins easily. There are usually students who are anxious to share their views. The teacher can use the following kinds of questions to focus the group back onto the moral dilemma, or to assist the students in tracking the discussion.

- **Checking for understanding** - determine whether the students understand a statement that an individual has made. Example: "Gene, will you tell me in your own words what Sheila said?"

- **Student interactions** - ask one student to respond to the position of another student. Example: "Dawn, what do you think of what Sally said?"

- **Clarification of moral terms** - ask students the meaning of terms or statements which seem unclear. Example: "Barb, what do you mean by morally right?"

- **Issue-related questions** - focus questions on one of the key ideas in Kohlberg's levels. Example: "Is it ever alright to break the law?" or "What are the human rights/issues in this dilemma?"

- **Role-reversal questions** - ask the students to look at a situation from the point-of-view of another character in the dilemma. Example: "You say that Cathy should lie to the police officer, should she also lie to her friend?"

- **Universal consequences questions** - ask the students to imagine what would happen if everyone behaved in a certain way. Example: "Phyllis, what would happen to our lives if everyone broke the law?"

Teachers should use moral discussions in their classrooms to quickly learn how to intervene with appropriate questions in order to keep the conversation focused on reasoning. Similarly, teachers also learn techniques that assist them in involving each of the students in the class.

A typical high school classroom will contain students who reason at two or more stages on Kohlberg's Scales. Discussion at various stages will often occur spontaneously. The teacher's primary task is to keep the discussion concentrated on the argument **at Kohlberg's stage where most students are and at one stage higher**. With a little practice, a teacher will be able to identify a stage-two reason and ask a student who has previously expressed a stage-three reason to respond to it.

DEBRIEFING

It is critical to allow at least five minutes for the debriefing session. There should be no attempt to reach consensus about the dilemma. Students should be asked to reevaluate their original position and their reasoning. Students who have changed their position may want to explain why they have done so. The teacher may decide to have students summarize their feelings in a homework assignment. Students could write a short essay, a story, or a poem on the dilemma. The key to debriefing is to bring the moral discussion to a close, but to avoid implications that there is one right answer to the dilemma.

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LESSON PLAN

Perennial Problem

What should be done to develop moral and ethical individuals?

Practical Problem

What should be done to help students recognize the consequences of cheating?

Objectives

The learner will:

Content: Discuss the impact and consequences of cheating.

Process: Evaluate how using a scenario to examine moral development promotes moral and ethical behavior in individuals.

Application: Understand how perceptions of individuals differ when identifying characteristics of moral and ethical individuals.

TEACHING-LEARNING INTERACTION

The interaction with students for this lesson will be the Moral Development Strategy. This is a method that assists in the development of moral and ethical individuals. The following teaching-learning interaction is an example of the use of this strategy.

1. Give each student a copy of the cheating scenario. Have the students read the dilemma and decide if the student involved in the scenario should or should not provide their friend with the answers for the test. The teacher should ask students to summarize the situation, identify characteristics of the story, clarify terms and facts.

Dilemma

You have just completed the midterm English test and are sitting in study hall with your friend who will take it during 6th period. Your friend, who is on academic probation, must pass this test to become eligible to participate during the winter sport season. You have already taken the test and know all the answers. Should you provide your friend with the answers to this test? Why or why not?

2. Ask students to identify the precise nature of the dilemma.

3. Students take a tentative position on the dilemma and defend their reasons for their position. Then ask students to share their responses.

4. Form small groups to discuss the dilemma in more detail. Allow approximately 10-15 minutes this discussion.

5. After the groups have had time to discuss the dilemma bring the group back together and ask, "Should the answers to the test be provided to the friend so they can continue to be eligible for their athletics?" A controlled debate should occur!!!

   Keep track of the responses and see if the answers can be grouped. Summarize the information provided through the discussion.

Debriefing

Content:

- What implications does this information provide when making decisions about moral and ethical behavior?
- How will you use this information when making ethical and moral decisions?

Process:

- How did the Moral Development strategy help you think about making moral and ethical decisions?
- What are some other ways the Moral Development strategy may help you solve moral and ethical problems?

Evaluation Options

- Have the students write out how they would address this dilemma instead of having it in a large group discussion. This may provide the students the opportunity to express their views without peer pressure.

- Have the students work with a group of preschool children and present them with a moral dilemma (Example: Your family is sitting down to dinner and the door bell rings. It is a visitor for dinner. You are having pork chops for dinner and there is not an extra one for the visitor. What should you do?) Have the students go through a process similar to the one they participated in during class. This activity will provide students the opportunity to observe the various stages of moral development.

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